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Human influence on climate extends to every continent

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Human influence on our climate is now apparent on every continent, including Antarctica, concludes a new study published on 30 October in *Nature Geosciences*.

The work also includes a first-ever detection and attribution study of the climate of the Arctic, confirming rapid warming in this region; something scientists have long expected to see.

In delivering its 'Fourth Assessment Report' in 2007, the Intergovernmental Panel on Climate Change (IPCC) concluded that the human fingerprint could be detected in averaged temperature rise over each continent, except Antarctica. However, a new study of almost 60 years of temperature records by an international collaboration of scientists, including the Met Office Hadley Centre, says this is no longer the case, concluding that Antarctica has warmed as a result of human influence.

The group, led by Nathan Gillett then of the Climatic Research Unit at the University of East Anglia, also performed the world's first detection and attribution study in the Arctic. Here the rapid warming caused by positive feedbacks within the climate system, while dramatic, is entirely consistent with computer simulations of the climate.

Peter Stott, head of climate monitoring and attribution at the Met Office said: "In both polar regions the observed warming can only be reproduced in our models by including human influences — natural forcings alone are not enough".

Commenting further on the results Stott continues: "For a long time climate scientists have known that Arctic areas would be expected to warm most strongly because of feedback mechanisms, but the results from this work demonstrate the part man has already played in the significant warming that we've observed in both polar regions".

Notes to editors:

- The Met Office Hadley Centre is the UK's foremost centre for climate change research. Partly funded by Defra (the Department for Environment, Food and Rural Affairs) and the Ministry of Defence it provides information to and advice to the UK Government on climate change issues.
- Records of Antarctic temperature are available from 1950. For the Arctic over 100 years of data are available.
- The study was led by Nathan Gillett now of the Canadian Centre for Climate Modelling and Analysis and included scientists from CRU at University of East Anglia; University of Oxford; National Institute for Environmental Studies in Japan; University of Edinburgh; Lawrence Berkeley National Laboratory in the USA; as well as the Met Office Hadley Centre.